

Section 2-1: Direct Variation

Warm-up: Get into small groups of 3 or 4. In your groups, you will list 5 examples of situations that are related so that a change in one condition causes a change in other conditions. For example, the speed a car is traveling is related to the stopping distance.

- 1.
- 2.
- 3.
- 4.
- 5.

All of these situations are known as variation.

Begin by reading pages 71 – 74. Then go to the wiki and find the link for “Section 2-1 Notes” on the “Chapter 2” page or enter this URL:

<http://mrlambmath.wikispaces.com/Section+2-1+Notes>

r Varies Directly as *c*:

Constant of Variation:

Direct Variation Function:

→

***The cost of gas varies directly as the amount of gas purchased. →

Example 1: Rewrite the statement, “The cost of gas varies directly as the amount of gas purchased.”

Example 2: The weight of an object on planet *P* varies directly with its weight on Earth *E*.

- a. Write an equation relating *P* and *E*.
- b. Identify the independent and dependent variables.

Example 3: The ingredients for a pizza and the price are proportional to its area. This means the quantity of ingredients is proportional to the square of its radius. Suppose a pizza 12 in. in diameter costs \$7.00. If the price varies directly as the square of its radius, what would a pizza 16 in. in diameter cost? What about an 18 in. pizza?

Steps to solving a direct variation problem:

- 1.
- 2.
- 3.
- 4.

Example 4: Find k if y varies directly as x where $y = 32$ when $x = 2$. Then find y when $x = 5$.

Example 5: m is directly proportional to n . If $m = 48$ when $n = 12$, find m when $n = 3$.

Homework:

“If you can find a path with no obstacles, it probably doesn't lead anywhere.” - Frank A. Clark